In the Specification:

On page 3 and continuing onto page 4, please rewrite Paragraph **[0012]** as shown below:

[0012] Some arrangements for practicing the present invention are illustrated in ~~figures~~ **Figures** 2A-2D. At least one machine 203 communicates with at least one host 201. The host may be a controller or a management system for one or more machines. The host may be centralized, distributed among processors, or centralized with some functions distributed among processors. Software implementing aspects of the present invention may run 202 on the host (Figure 2B), on other equipment that listens to communications between the host and the machine (Figure 2A), or on other equipment that has protocol translation capabilities (Figure 2C). The equipment with translation capabilities may translate messages from a serial protocol to a network protocol or among other types of communication or transport protocols. For instance, it may translate from a CAN+ or IEC 62026 bus protocol to an Ethernet protocol. One description of CAN+ bus and other sensor / actuator bus (SAB) protocols appears in James R. Moyne, Nader Najafi, Daniel Judd and Allen Stock, "Analysis of Sensor Actuator Bus Interoperability Standard Alternatives for Semiconductor Manufacturing", Sensor Expo Conference Proceedings (Sept. 1994). SAB protocols which may be used with the present invention include WorldFIP fieldbus, DeviceNet ~~protocl,~~ **protocol,** SDS, J-1939, LONWorks protocol, Seriplex protocol, ISP Fieldbus, and BITBUS, and the later, ~~deriviative~~ **derivative** or updated implementations of these protocols. Software implementing aspects of the present invention also may run on equipment that listens to communications between the host and the machine (Figure 2D,) tapping into communications lines. In configurations 2A, 2B and 2D, the listening device is removable and distinct from either the host or tool. It can be added near the host or tool, or remote from either the host or tool. It functions independently of either the host or tool. When removed, it is reusable with another tool without physical alteration, with reprogramming or resetting. In configuration 2D, several types of couplings can be used to tap into the communication lines. A connector may be inserted into the lines.

The tap lines leading out of the connector may be physically coupled to the communications lines, may be magnetically coupled or in any other way effective to split or replicate the signal in the communication lines. A hub with an extra port can supply access. Magnetic sensors may be placed proximate to the communications line to sense signals in the lines to provide magnetic coupling without inserting a connector or hub in the communications lines.

On page 5 and continuing onto page 6, please rewrite Paragraph **[0016]** as shown below:

[0016] Devices that can be used to implement aspects of the present invention include a variety of general-purpose computer systems. PRI Automation, Inc. produced one such eQonnector hardware. PRI's eQonnector was a fully functional x86 based computer running Windows NT without a keyboard or monitor. The system includes a variety of input output ports: 2 Ethernet connections for 10/100 base T connection; 2 isolated RS 232-c ports using DB-9 connectors; and one DeviceNet (CAN-compatible) interface using a DIN jack. The eQonnector further includes 128 MB of RAM, a 4 GB hard disk and a universal power supply. Its size is approximately 200 mm diameter (generally round) and 50 mm high. Another eQonnector is a generic computer system, a portion of which is depicted in an interface block diagram, Figure 3. Two alternative Advantech single board computers ("SBC") that may be suitable are Advantech PCM-9550F and PCM-9572F. The latter SBC provides more capability to support advanced functions. An interface PCB provides functions not included on the SBC. The SBC and interface PCB are housed in a rectangular aluminum enclosure, constructed from standard extrusions provided by Parvus ~~**Corporaton,**~~ **Corporation,** with sheet metal end caps. The overall dimensions are 3.5" H x 6.6" W x 9" D. The hard disk is an IBM Travelstar DJSA-210 with a 10 GB capacity or larger. Figure 3 depicts components of the interface PCB. Several connectors are provided for linking the interface PCB and the SBC. A digital input output connector 301 provides eight bits of digital input output, connected to the SBC. The digital input output connector 301 may be compatible with OPTO-22I/O module racks. The eight bits are allocated by the header 304. Bit seven

is connected to the shutdown switch, for signaling the SBC to shut down. Bit 6 indicates whether the system is operating in eavesdrop or pass-through mode. This bit controls the connection relay 307. The default power off condition is for the device to be in eavesdrop mode. The connection relay 307 controls the configuration of the COM 1 and COM 2 port connectors, 311A & 311B. These ports are optically isolated from each other (306A & 306B) and from the monitored communications channel. The pin assignments in the eavesdrop and pass-through modes are:

SBC Signal	Eavesdrop	Pass-Thru
COM1 – Tx	N/c	DB9a – pin 3
COM1 – Rx	DB9a – pin 2, DB9b – pin 3	DB9a – pin 2
COM1 – Gnd	DB9a – pin 5, DB9b – pin 5	DB9a – pin 5
COM2 – Tx	N/c	DB9b – pin 3
COM2 – Rx	DB9b – pin 2, BD9a – pin 3	DB9b – pin 2
COM2 – Gnd	DB9b – pin 5, DB9a – pin 5	DB9a – pin 5

Bits 4 and 5 control a two-bit display 309. Bits 0-3 control a four-bit display 310. The front panel connector 302 connects a reset switch 305 and a watchdog component 312. The serial connector 303 connects two to four COM ports 311A-311D to the SBC, through isolation devices 306A-306D, such as optical isolation devices or high impedance amplifiers. A parallel port connection from the SBC 321 is coupled to an iButton circuit 322. The iButton circuit supports a particular format of user mountable memory provided by Dallas Semiconductor, known as an iButton 323. In alternative embodiments, an EEPROM, EPROM or other non-volatile memory component could be used. The connections to the SBC for power 332 and ATX 335 supply and control power. An LED 331 indicates the power on status. A relay circuit 333 is responsive to the ATX signal from the SBC 335 and to the power switch 336. It controls the feed of power from an external power source 334 to the power connector 332. Other interfaces mounted on the interface PCB board and connected to the SBC support a keyboard 341, 342, a mouse 343, 344, an Ethernet connection 345, 346 and a USB connection 349, 350. A second LAN Ethernet connection 347, 348, ~~may~~ may be supported by a

Versalogic EPM-NET-100 PC/104-plus board. This board should be installed first in the PC/104 stack when it is used. An analog input board, Advantech PCM-3718H-A also may be used in some embodiments of the present invention. Analog support may provide 16 ~~**singled ended**~~ **single-ended** or 8 differential analog inputs. Analog inputs may have 12 bits of resolution or more. An expansion digital I/O board, the Advantech PCM-3724-A2 PC/104 board, may be used in conjunction with the present invention.